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DESCRIPTION OF NEW SPECIES OF BUTTERFLIES FOUND IN THE UNITED STATES.

BY W. H. EDWARDS, COALBURGH, W. VA.

I. ARGYNNIS SEMIRAMIS.

Male.—Expands about 2.3 inches.

Upper side bright fulvous, very little obscured at base; the black markings much as in *Adiante*, that is, slight on primaries, and still more so on secondaries, the spots on disk and to base being scarcely more than streaks.

Under side of primaries cinnamon-red at base and along inner margin to median, the upper two median interspaces more or less buff in middle; this red also crosses basal half of cell, and borders median to the arc; the remainder of cell and the discoidal and costal interspaces buff; a brown sub-apical patch, and hind margin brown; the sub-marginal crescents brown, and near apex lost in the ground color, from upper row branch of median containing imperfectly silvered spots, the others without silver; the two spots on the patch well silvered.

Secondaries ferruginous-brown from base to second row of spots, mottled with a lighter shade; in some examples there is more of the light, the deepest color being in and above cell; the band between the two outer rows of spots quite clear, in color brownish buff; all the spots well silvered; those of marginal row long and narrow, of second row mostly large; so also of third row; all of these two rows edged slightly on basal side with black.

Body above concolored with wings, the thorax somewhat brown, beneath yellow-buff throughout; legs same, the upper sides reddish; palpi yellowish, red in front and at tip; antennæ black above, ferruginous below; club black, ferruginous at tip.

Female.—Expands about 3.7 inches.

Upper side nearly same color as in male, the markings of same character, sometimes almost obliterated on disks of secondaries. Under side

of primaries red over a large part of the wing, the upper outer corner only of cell being buff; the spots well silvered, the submarginal being usually limited to upper half the wing, as in the male, but examples occur in which silver is found down to lower median nervule.

Secondaries sometimes wholly fawn-color, except that the band has a tint only of yellow; in other examples the ground is darker, more brown, and the band is more distinct; all spots well silvered, those of the outer row sub-crescent and broad, of second row mostly large, and egg-shaped; the spots are closely as in *Coronis* and *Callippe*.

From San Bernardino, California, taken by Mr. W. G. Wright. I have seen upwards of 30 examples of this species, male and female, and the characters are very constant. It is curious how the markings resemble two such different species as *Adiante* (upper side) and *Coronis* (lower side).

2. ARGYNNIS CYPRIS.

Male.—Expands 2.8 to 3 inches; size of *Alcestis*, which it closely resembles. Upper side bright fulvous, scarcely at all obscured by brown at base; the black markings light; both wings bordered by a double line, the submarginal lunules touching it only at apex of primaries; the round spots small; the mesial band of secondaries represented by narrow and small crescents; the spot in cell more like figure 2 than letter S; fringes black at ends of nervules, yellowish in the interspaces.

Under side of primaries nearly all cinnamon-red, only the upper outer corner of cell and the interspaces next beyond being buff; apex and hind margin brown, the latter shading into the red of wing towards inner angle; the lower three or four submarginal spots sharply serrated, black, the rest same brown as the margin, and not defined; these last only enclosing spots which are imperfectly silvered; on the sub-apical patch three well silvered spots.

Under side of secondaries light ferruginous-brown from base to farther side the second row of spots, mottled a little with reddish buff; the margin and the shadows over the outer spots same brown; the band reddish buff, much encroached on by the brown ground on either side, after the manner of *Aphrodite*, and more or less sprinkled with brown scales; the spots rather small, and well-silvered; the marginal row sub-triangular, sometimes broad, sometimes quite narrow; the spots of second row mostly egg-shaped; and these as well as the next row are edged on basal side

rather heavily with black ; a little silver at the junctions of the nervures at base, and along the shoulder and inner margins ; a small spot in cell in black ring.

Body concolored with the wings, thorax somewhat brown ; beneath, abdomen yellow-buff, thorax same, but with many red hairs ; legs red on upper sides, yellowish below ; palpi yellowish within, red without and at tip ; antennæ black above, fulvous below ; club black, tip ferruginous.

Female.—Expands 2.8 to 3 inches.

Color less bright, over secondaries decidedly reddish next base and on disk, the bases much obscured ; the markings heavier ; the marginal lines on both wings more or less confluent, and on primaries making a broad and solid border ; the spots on secondaries as in the male, the mesial band being broken into a series of separated crescents.

Under side of primaries fiery-red, the outer corner of cell and next interspaces yellow-buff ; the silver spots limited to the upper half wing, the serrations below these sharp and black.

Secondaries deep ferruginous, mottled a little with reddish buff ; the band encroached on as in the male ; the spots scarcely larger, and all well-silvered.

Found from Arizona to Montana. Taken in Colorado in 1871 by Mr. Mead ; by Mr. Morrison, in his trips to So. Colorado and to Arizona ; by Mr. Nash and Mr. Bruce in Colorado. It seems to be an abundant species in the latter State. From the time I received examples from Mr. Mead this form was a puzzle to me. It looked a good deal like *Aphrodite*, but yet was considerably unlike the Atlantic *Aphrodite*. When *Alcestis* was separated, this Rocky Mountain form seemed still more like that, but was manifestly distinct from it. In 1884, I received eggs from Mr. Nash, Pueblo, Col., and the females that laid them. From these I bred the larvæ and got three imagoes, one male and two females, in 1885. I had not felt sure before that this form of male belonged to these females. The larvæ of *Aphrodite* and *Alcestis* I am well acquainted with. Both are brown-black when mature, with no other colors than what is present at the base of the tubercles, yellow or orange. In the present species the larvæ showed marked differences from those mentioned before they were half grown, and the mature larva is quite another affair, largely yellow, mottled black and yellow. As I shall figure the species and these stages in Vol. 3, Butterflies N. A., now begun, I will not describe the preparatory stages here. This is the species by mistake spoken of as

Halcyone in my letter to Professor Lintner, printed in Ent. Amer., 1, p. 213. *Halcyone* does not belong to the *Aphrodite* sub-group, but to that of *Coronis*. The larvæ of *Aphrodite* and *Alcestis*, as well as of *Cybele* and *Idalia*, will all be figured in my Volume 3; and some other Argynids also for that matter.

3. MELITAEAE WRIGHTII.

Male.—Expands 1.3 inch.

Upper side black, marked with fiery fulvous and ochre-yellow; primaries have nearly all the cell red, in the example under view, sprinkled along median and at outer end with black scales; the marginal spots from near apex to upper branch of median, four in number, are large, rounded, the lowest one elongated, red, and the interspaces before each are red between the two rows of yellow spots; these spots of the first, or outer row, are all small, one to each interspace, and cross the wing, almost parallel with hind margin, but somewhat sinuous; the second row crosses the wing beyond cell, is made up of large spots, the one of upper median interspace wanting; a large spot of same color at outer end of cell, and another below.

Secondaries black; a marginal series of large ochre-yellow rounded spots, a sub-marginal of small, and a third of elongated across the disk, besides four nearer base, all these ochre yellow; fringes black at ends of nervules, pale yellow in the interspaces.

Under side of primaries red, the yellow spots repeated and enlarged; the red marginal spots replaced by yellow, the one in upper median interspace wanting, and the ground there being red.

Secondaries black, nearly covered with ochre-yellow spots; the marginal series large, irregular in size, nearly all sub-quadrangular; above these a row of small, round, on the black ground; the discal series much longer than on upper side, and the last one is extended up inner margin almost to base; about base and in cell six spots cover nearly all the surface.

Body black, the rings of abdomen edged by yellow; under side yellow; legs red; palpi yellow, red without and at tip; antennæ black; club black, ferruginous at tip and beneath.

Female.—Expands 1.8 inch.

Similar to male, the apex largely red in all the interspaces, and the cell throughout; the spots on both wings, both red and yellow, larger.

Under side as in male, the yellow spots of submarginal row on secondaries more or less confluent with the marginal.

From 1 male, 1 female, sent me by Mr. W. G. Wright, taken at San Bernardino, flying with *Leanira*. Mr. Wright had in all 2 males and 2 females, the only examples observed by him. The species is nearest *Fulvia*, and is distinguished at once by its excess of red.

COLEOPTERA FOUND IN DEAD TRUNKS OF *TILIA AMERICANA* L., IN OCTOBER.

BY C. H. T. TOWNSEND, CONSTANTINE, MICH.

Having examined a good number of dead trunks of the basswood or American linden, * *Tilia Americana* L., here this fall, I have found quite a list of Coleoptera in them either under the bark or in the decayed wood. The following is the list, which embraces thirty-four species taken from 13th October to 3rd November, 1885. Some of the species are only of accidental occurrence in the trunks, but will be readily known, and are given to record them from this locality. The determinations are mostly by Dr. Horn:—

Tachys nanus Gyll. Colonies or scattered individuals mixed with colonies of *Silvanus planatus* Germ., or by themselves, under the bark of the less decayed trunks.

Tachys flavicauda Say. One immature specimen by itself under the bark of a small decayed trunk, 17th October.

Pterostichus honestus Say. One or two specimens under some of the loose bark.

Platynus sinuatus Dej. Several under the same bark with the preceding.

Chlaenius circumcinctus Say. Remains of one specimen found under the bark of an upright decayed trunk out in the water, by the edge of the river.

* As a supplementary note to the trees of the main river district given in a previous article (CAN. ENTOM. XVII. p. 170), I would say that I omitted to mention the basswood, which is one of the most prominent trees of the rich woods along the St. Joseph River here, on account of its stately growth and straight, bare trunk, extending upward, smooth often for more than half its height. The button-wood or Western plane tree, called also sycamore, is of the same district.

Xantholinus cephalus Say. One under the bark.

Enchomus ventriculus Say. Taken singly under the bark.

Silvanus planatus Germ. Numerous colonies under the bark of the less decayed trunks.

Cucujus clavipes Fab. Four fine imagos taken 13th October, under the bark of a fallen trunk, one in an enclosure of borings formed on the inside surface of the bark, with pupal skin from which it had lately emerged beside it in the cell. On the inside of a strip of bark from another prostrate trunk, there were 18 or 20 of the empty cells in a continuous patch, where the beetles had transformed, six of these being in an exactly straight row, with their edges meeting in perfect regularity. Numbers of the larvæ under the bark of the trunks.

Læmophilæus pusillus Sch. One colony of about 25 individuals under the bark, 3rd November.

Brontes dubius Fab. Two specimens taken at different times under the bark, 13th and 15th October.

Hister vernus Say. A solitary specimen under the bark, 15th October.

Hister carolinus Payk. A solitary specimen under the bark, 3rd November.

Tenebrioides castanea Melsh. A number taken under the bark of a small, dry, decaying upright trunk, and an occasional specimen in other trunks.

Alaus oculatus Linn. Four of the beetles taken in the decaying wood of the trunks, and, 13th October, one pupa. Of the four imagos, three show inequality of the elytra, one considerably, the two others slightly.

Elater manipularis Cand. One specimen under the bark, 3rd November.

Melanotus communis Gyll. Under the bark.

Buprestidæ, larvæ of one species. A number of small, flat, big-headed borers taken 15th October boring between the bark and the wood of a rather sound trunk, one just beginning to decay, the bark being tight.

Cis chevrolatii Mellié. Two specimens taken 13th October, one on a small, hard kind of fungus growing out of the bark, the other under the bark.

Parandra brunnea Fab. Several dried specimens found under the

loose, dry bark where a fallen trunk had broken over, its base being suspended from the stump.

Cerambycidae, larvæ of two species. Borers of uncertain genera, taken 15th October in same trunk with the *Buprestidæ* larvæ referred to above. A round, pinkish larva of moderate size, taken boring in the bark; and some larger and stouter larvæ, whitish or yellowish and round, boring first between the bark and wood, and afterward penetrating the wood and stopping up their passages with borings next the bark. Some larvæ very much like the latter, taken 3rd November in the decayed wood of another trunk.

Chrysomela elegans Oliv. Remains of one specimen, with the color well preserved, found under the bark.

Nyctobates pennsylvanica DeG. Common under the bark.

Scotobates calcaratus Fab. Remains (elytra and abdomen) of one specimen found in its cell, where it had transformed and died, in the decayed wood of an upright trunk in the water by the edge of the river.

Hoplocephala bicornis Oliv. Seven specimens altogether. One male under the bark, 13th October, one male in the decayed wood, 17th October, and three male and two female specimens under the bark, 3rd November. Of those taken the latter date, four were in company together. The specimen taken in the decayed wood was in a small cell or passage. and was found in such a manner as to indicate that it had fed on the wood.

Platydemus ruficornis Sturm. Nine specimens together under the bark at the base of an upright trunk, 13th October, and a company of fifteen under bark of a prostrate trunk, 15th October.

Tetratoma truncorum Lec. Four specimens, taken 13th October, under the loose, dry bark of the fallen trunk suspended at the base, and one, 17th October, in the decayed wood of a small, upright trunk. Two of those taken 13th October were *in coitu*, and remained joined after death in the alcohol bottle.

Penthe obliquata Fab. Two specimens taken at different times under the bark, 13th and 15th October.

Eustrophus bicolor Say. One solitary specimen taken 15th October, under the bark.

Orchesia castanea Melsh. Several taken under the loose, dry bark of a small upright trunk, 13th and 17th October.

Eupsalis minuta Drury. A single, apparently dead specimen, taken

3rd November in the decaying wood of a fallen trunk, where a piece had previously been broken out of it. It is likely to have been bred in the wood. Have taken numbers here under bark of dead oak.

Stenoscelis brevis Boh. Three specimens (one immature, being very light with only a slight tinge of color), taken 17th October in two small upright trunks, in their little cells in the dead and rotten wood, upon which they had without doubt fed in the larva state, and there changed afterward to perfect beetles.

Cratoparis lunatus Fab. Three specimens, two taken 13th October and one 17th October, in same trunks as preceding, under the loose bark but near some small holes in the wood, from which it is very probable they had lately emerged. I am inclined to the opinion that they had passed their larva state in the trunks, feeding on the decaying wood.

NOTES ON HYMENOPTERA, COLLECTED NEAR OTTAWA.

BY J. A. GUIGNARD, OTTAWA.

Within the first year of work in this branch of entomology in the Ottawa district, I was able to make acquaintance with all the 26 orders into which Hymenoptera are divided in Mr. Brodie's Canadian list; and now at the end of our second year, out of 247 genera, only about 70 remain unrepresented, while 13 genera are added not yet before met with in Canada, two of which have never been described.

I shall leave out the *Uroceridae* and *Tenthredinidae*, and not include them in the following figures, as Mr. W. H. Harrington has given especial attention to those two orders, and has already published an article on them.

As far as yet known, about 110 species new to Canada have been taken in this neighborhood, and more than half of them have been pronounced to be new to science by our high authority, Abbé Provancher, who has undertaken to describe them.

As to those already described, the Abbé, who has been so kind as to examine and identify them, has been greatly surprised at our possessing here many insects never before found in so high a latitude.

Order I. Among the *Apidae* we have, for instance, obtained the red-girded *Bombus rufocinctus* Cress. We have also, however, *B. groenlandicus* Smith, which connects us with quite a different climate.

In the genus *Apathus*, we have a large new species, with black abdomen.

Order II. We raise the number of Canadian *Andrenidæ* from 120 to 125, a dozen being new species, one of a new genus close to *Stelis*; they are: 5 *Andrenæ*, 2 *Halicti*, 1 *Heriades*, 2 *Sphecodes*, besides another insect which Abbé Provancher has, on a first examination, placed among the *Anthophoræ*, but which, from its mouth-parts, seems to me to be nearer *Andrena*.

Of *Andrenidæ* described by Smith, we obtained:—

Andrena clypeata, male, yellow-faced, rather common, originally found in Florida.

A. fragilis, remarkable for its immensely long mandibles, and

A. victima.

Anthophora marginata?

Melissodes nigripes.

Megachile acuta, and the pretty little

Stelis fæderalis.

Of species named by Cresson, we possess:—

Halictus disparilis and *H. connexus*.

Andronicus cylindricus, whose male has very characteristic flattened and toothed antennæ.

Aldidamea pilosifrons—the antennæ of the male are also flattened, but end in a sharp hook. The females of the two species have ordinary clavate antennæ.

Orders III., IV. *Vespidæ* and *Eumenidæ*. New species, none, as well as in the Orders VIII., *Bembecidæ*, X., *Sphegidæ*, and XXIV., *Evanidæ*.

Order V. *Crabronidæ*. Besides a new *Philanthus* obtained by Mr. Harrington, we add to the list:—

Oxybelus interruptus Cress., and *O. emarginatus* Say.,

Crabro chrysanginus St. Farg., *Cr. obscurus* Smith,

Cr. producticollis, Pack., and the diminutive

Stigmus pusillus Say.

Order VI. *Nyssonidæ*. Of this order of fine lively insects we add *Alyson melleus* Say, with yellow head and thorax, two new species of *Alyson*, which would both be easily mistaken for the male *Alyson oppositus* Say, and a very small *Nysson*, unspotted black.

Order VII. *Larridæ*. What I had taken for a *Nysson* has been recognized by Abbé Provancher to be a new species of *Lyroda*. I obtained

also a new *Larra*, very much like *L. terminata* Smith both in shape and color, but smaller.

To these two new species must be added the three following: *Larra argentata* Say, *L. levifrons* Smith, and *L. arcuata* Smith.

Order IX. *Pompilidae*. I caught this year

Agenia calcarata Cress., and two other species of the same genus, one pitch-black, of slender body, the other stout, with red abdomen, both new;
A new *Pompilus*, with abdomen and femora tipped with white,
And a ridiculously small, but most elegant *Ceropales*.

Order XI. *Scoliidae*. A fine little *Tiphia* seems to be *T. tarda* Say.

Order XII. *Mutillidae*. Only one specimen has been met with belonging to this Order, a *Methoca*, found by Mr. Harrington.

Order XIII. *Formicidae*. The only two genera of this Order noticed before in Canada were *Formica* and *Myrmica*; to the lists of their species must be added

Formica latipes? Walsh.

Myrmica opposita, Say, and

Myrmica lincolata Say.

Of other genera we have—

Solenopsis fugax Latr., only 1 millimetre long, common to Europe and America, caught in the Parliament's conservatory.

Ponera contracta Latr., moreover

4 new *Formica* have been found,

1 " *Myrmica*,

1 " *Lasius*,

1 " *Leptothorax*, and

1 " *Amblyopope*.

But before describing most of those new insects, Abbé Provancher wants the three sexes, which we do not yet possess. Of the last named he writes:—"It is a tropical genera, new to North America." It is, therefore, a most extraordinary find.

Order XIV. *Chrysida*. Four species of *Chrysis* are new to the list,—of which one to science. The three before described are *Chrysis bella* Cress., *C. venusta* Cress. and *C. divergens* Cress.

Of the genus *Cleptes*, we have only one specimen, which belongs to an undescribed species.

There is to be added a new species of a genus not recorded before in

Canada, *Telenomus*. The last named a beautiful small insect of a shining black, while the *Cleptes* is rose-colored.

Order XV. *Chalcidida*. This order of parasites and the next orders abound in more or less microscopical insects, some wingless, as found by Mr. Harrington in moss. We have sent only some of the larger ones to the Abbe' Provancher, who has identified

Smicra microgaster Say, and *Pteromalus vanessæ* Harr., besides referring other specimens to the genera *Callaspidia*, *Haltichella*, *Chalcis* and *Ormyrus*, all new to Canada except *Chalcis*.

Order XVI. *Cynipida*. Two new species have been captured by Mr. Harrington.

Rhodites bicolor Harr., and a very fine large *Halia*, of which the Abbe had been shown a specimen at St. Hyacinth, but wanting the abdomen.

Order XVII. *Proctotrupida*. This order gives us a new *Aneurynchus* and a new *Bathylus*.

Order XVIII. *Braconida*. Two new species—

Rogas parasiticus Nort., and

Chelonus laevifrons Cress. have been found, as well as seven new species—

One of *Syngaster*.

One of *Opius*.

One of *Microgaster*.

Two of *Microctonus*.

One of *Capitolinus*, a genus new to Canada, and lastly one of an undescribed genus of the tribe of the *Flexiliventre*s.

Orders XIX. to XXIII. *Ichneumonida*. In the numerous species of this order I have very few new ones to record.

Lampronota laevigata Cress., and

Exetastes fuscipennis Cress., besides the following new species, undescribed:

One *Ichneumon*.

Three *Platylabus*.

Two *Phæogenes*.

Three *Phygadeuon*.

One *Hemiteles*.

Two *Limneria*.

One *Ephialtes*.

One *Theronia*.

One *Mesoleius*.

I regret not having time now to mention some interesting insects already on the list.

DESCRIPTION OF A SEEMINGLY RARE AND UNIQUE MOTH.

BY PH. FISCHER, BUFFALO, N. Y.

BROTIS VULNERARIA Hüb.

This moth appears to be the only one of its genus so far known in the United States.

Head small, yellowish red, almost hidden between the large and prominent eyes, which are naked; palpi medium, slender, lighter colored; thorax long, covered with long fine hair; abdomen much shorter than the anal margin and Hesperid-shaped. Posterior wings elongated, costa straight, somewhat curved at apex, outer margin straight, inner margin somewhat rounded. On anterior wings the anal margin is longer than upper and outer margin, the latter being strongly rounded.

Color of entire insect a blackish brown, with three faint black lines running from inner margin to costa, on upper wings; while there are only two on lower wing, running in a zigzag from anal to upper margin, and a single minute oval white dot within a black shading, between the two lines in equal distance from upper and anal margin. On the upper wings, nearer to apex and reaching costa, is a large triangular spot of a reddish-tinted light ochre-yellow. Antennæ long, yellow, pectinate, ending in a long thin spine. Under side, except palpi and upper tibiae, silver grey. Size, $1\frac{3}{4}$ inches.

This interesting moth has been taken, with many other new and fine things (new in this locality), at the electric light near this city. At the first glance it resembles very much some large specimen of the darker Hesperidæ, and could easily be mistaken for one, if the strongly pectinate antennæ would not at once refer it to the Heterocera. The only figure of it has after a careful search been found in Hübner's "Zutrage," vol.

4, 2nd hundred, where the text reads thus: "From Bahia*; Es ist blos, gewagt diese Gattung für eine Geometra ampla und Erastria abstracta zu nehmen," etc., which shows that this eminent author has even been in doubt where to place this specimen, as will be seen in the text accompanying the figure, and seems inclined to refer it to the Geometridæ.

Mr. Grote, in his last list, 1882, Heterocera of the United States, mentioned it and placed it as a separate Group after Hexeris, where I think it does not rightfully belong. It is entirely different in shape of head, thorax, abdomen and wings, from its neighbors; and if a Noctuid, should be last, and just before Eupethecia. It also strongly reminds, but in shape and antennæ only, of *Amphidasys cupitaria* Gr., or *cognataria* Guen. Neither the genus nor the specimen is mentioned in the Brooklyn List. On Hübner's plate, in his vol. 4, Mr. Grote wrote under the figure thus: "Wisconsin (Hinsdale), Racine College, Wis.," without any further remarks, whether *B. vulneraria* has been found there, or only been seen by him in the collection of said College.

ON THE PROBABLE FOOD OF THE LARVA OF SCENOPINUS.

BY DR. H. A. HAGEN, CAMBRIDGE, MASS.

Prof. F. W. Putnam communicated to me a larva of *Scenopinus* found in his house under a carpet. It belongs very probably to *Sc. pallipes* Say, which was reared by Mr. Sanborn out of larva found under a carpet. The larva is figured by Prof. A. S. Packard, Guide, p. 1 and 401, and Proc. Essex Just., October, 1867, p. 94, where three other larvae found under the carpet are mentioned. There are three European species reared. *Sc. senilis* (Bouché Naturg. Ins., p. 46) is said to live in rotten fungus on willows and other trees. *Sc. fenestralis* (Assman Stett. Ent. Z. 1863, p. 400) in over-ripe strawberries; but it has been later suggested that it may belong to another species. Frauenfeld (Verh. Zool. Bot. Ges. Wien. 1864, vol. xiv) has reared *Sc. fenestralis* from larvae found in a horse hair mattress. Prof. Loew records the larvae living in a swallow's nest. Mr. Perris (Ann. Soc. Ent. Fr. 1870, vol. x, p. 230) tells that Dr.

* Bahia or San Salvador is a province of Brazil, about 600 miles north of Rio Janeiro.

Cartereau found in a swallow's nest a pupa of *Lucilia dispar* containing an imago of *Sc. fenestralis* which had not been able to leave the pupa of *Lucilia*, so the larva must have fed on it. Mr. Perris has found the pupa in wood holes made by *Hylotrapes bajulus*. He supposes the rotten fungi may have been attacked by Tineidæ or Coleopterous larvae, and that the larva of *Scenopinus* is carnivorous. Prof. F. W. Putnam found his larva near to an empty case of the cloth moth. Should it happen to be that the *Scenopinus* larva destroys those of the cloth moth? Then it would be a very beneficial insect. It would be very interesting to ascertain the fact by direct observation.

DESCRIPTIONS OF THREE NEW SPECIES OF GEOMETRIDÆ.

BY J. ELWYN BATES, SO. ABINGTON, MASS.

RHEUMAPTERA BRUNNEOMACULATA, sp. nov.

Abdomen and ground color of wings white. Head, thorax and antennæ cinereous. Inner third of fore wings containing three irregular ash-colored lines more heavily shaded towards the thorax. Mesial band crossed by two narrow, irregular and somewhat interrupted cinereous lines, between which on the inner margin of the wing is located a very distinct sub-triangular spot of deep brown color. Another larger, nearly quadrangular, very distinct brown patch, widest on costa, extends from costal margin to near the middle of the wing, in the lower part of which is located the oblong very dark brown discal dot.

The mesial band is limited exteriorly by a regularly scalloped cinereous line. A narrow sub-marginal irregularly scalloped white line shaded on both sides with brown scales; a darker patch filling two scallops above the middle and widening somewhat towards the outer margin of the wing.

A dark brown costo-apical patch about 0.04 of an inch broad, filling the space between the mesial band and the sub-marginal white line, beyond which is another small brown spot. Cilia on fore wings light brown. Hind wings with discal dot, and a strongly scalloped sub-marginal white line slightly sprinkled with brown scales, and heavily shaded interiorly with ash color.

Cilia nearly white dusted with brown scales at the terminus of the

veins. Beneath lighter ash-color with discal dots reproduced in both pairs of wings.

Expanse of wings one inch. Length of body 0.35; of fore-wings 0.45.

This fine species is described from one male captured in So. Abington, Mass., and is the only example that I have yet been able to find in ten years collecting.

It seems to be more nearly allied to *R. ruficollata*, Pack., than to any other species, yet is very different in size and markings.

SEMIOTHISA SEX-PUNCTATA,* sp. nov.

This species may perhaps be best described by a comparison with *S. granitata*, to which it seems closely allied, yet quite distinct. Antennæ simple. General color similar to many examples of *S. granitata*. Fore wings not excavated. The distinctive marks are four well defined, dark brown spots on the discal margin of the fore wings, which form the terminus of four pale ash-colored lines, while the extra discal line is rather broad, and contains two oblong parallel dark brown spots just above the middle of the wing. Discal dots barely apparent on both sides, but more distinct on hind wings. Beneath quite ochreous, but no more so than some varieties of *S. granitata*.

Expanse of wings 1.23 inches. Length of body —? (abdomen wanting).

Described from one female captured in Elko, Nev., at an elevation of about 10,000 feet.

PHASIANE CINEREATA, sp. nov.

Antennæ simple. Head, thorax and abdomen glaucous.

General color of wings above ash-gray; beneath approaching ochreous. A narrow brown line crosses the fore wings on the inner third, becoming nearly obsolete on the costa. The oblong discal ringlet centered with white. A faint brown line runs from the middle of the inner margin to the discal ringlet, but is very faint in this vicinity. An extra-discal narrow brown line crosses the wing, becoming obsolete on outer margin of hind wing, but reappearing near the middle and continu-

* Since writing the above, I have found a female example of *S. sex-punctata* that I had overlooked. The only difference from the one described is that the two small parallel brown spots in the centre of the extra-discal shading are in this example united into one spot.

ing to the inner margin. A sub-marginal somewhat diffuse brown band crosses both wings. A marginal row of triangular, intervenous, black dots. Fringe concolorous with the wings. Discal dot on hind wings brown, distinct. Veins beneath tawny and very distinct, between which the white and brown scales are nearly equally distributed, except that the brown predominates somewhat near the costa of the fore wings, and the white near the outer margin of hind wings. Discal dots dark brown, distinct. Legs concolorous with body and wings. Length of body 0.45; fore wing 0.58; expanse of wings 1.18 inches.

Judging from Mr. Packard's description of *P. neptata*, this species seems more nearly related to that form than any other.

Described from one female taken in Elko, Nevada.

NOTES ON ANT LIONS.

BY J. ALSTON MOFFAT, HAMILTON, ONT.

As my former notes on the Ant Lions were of interest to some of your readers, perhaps a few additional particulars on the same subject may not be objectionable to them. Having had another opportunity of observing their habits, I made the best use I could of it. The abdomen of the nymph is somewhat heart-shaped, flat beneath and very much rounded above, thickest near the thorax, and sloping off suddenly to the sides and tail, which is an acute point. The thorax is long, and with the head is narrow and flat above, a form no doubt well adapted to its requirements. Its mode of travelling is backwards, always "advancing to the rear," one side contracted, which produces a circular movement, so that when one was placed in the centre of the palm of the hand, it made two rounds before it dropped over the side. As soon as it touched the sand it put itself instantly out of sight under the surface, where it lay for a short time perfectly quiet. When it began the formation of its pit, which I watched to its completion, it commenced by a jerk of the head and thorax, which threw the sand off and exposed them to view. It lowered them at once, made a sudden start back, when the sand covered them; then another jerk and another backward move rapidly executed, always throwing the sand to the outside. In its first round it described a circle of about an inch in diameter, reducing the circle with each round. A mound was

formed in the centre and the sand ran into the trench from both sides, and thus it worked away without a halt until the mound was all thrown out, and the pit had assumed the funnel shape, when it took a rest, after which it began throwing out the sand from the centre at its leisure, deepening and widening the pit very much. The time occupied in the first part of the operation may have been about half an hour.

One that I was watching, after it had made nearly a round in commencing a pit, seemed to be dissatisfied with the location, and started off on a prospecting tour to find one more to its liking. Its course was quite discernible by the disturbance of the surface sand, although it never appeared in view. In its travels it met an obstruction, a piece of broken pine limb about four inches long and an inch and a half in diameter, imbedded about an inch in the sand. Against this it struggled until it raised it out of its bed, moving one end along an inch and a half, when it was sufficiently elevated to permit the nymph to pass on without going below its ordinary depth. It had travelled hither and thither over a space of 12 or 14 inches without stopping, before I left it. It is most amusing to place one on its back and watch it get on its feet again. Although I am afraid the operation is quite indescribable by me, I can tell what it does not do; it does not spring up like an *Elater*; it does not stretch out its legs as beetles generally do, they being very short, it could not nearly reach with its feet the surface on which it is laying; it does not seem merely to roll over, for when it has got on its feet it is in the identical spot it was when on its back. But while one is watching it attentively, it suddenly assumes that hazy, indefinite appearance that anything will when in rapid vibration, and when again distinctly seen it is resting quietly on its feet, but what it did more than vigorously shake itself, or how it accomplished the "presto change," I cannot say. I watched it again and again but could make nothing more of it.

The species to which these nymphs belonged would be either *abdominalis* or *obsoletus*, and they must have been nearing maturity, as some were out on the wing at the time. I took two *abdominalis*, one of them with a most unseemly length of abdomen, extending full three-fourths of an inch beyond the wings, which I take to be a female.

ABOUT CLEANING OILY SPECIMENS OF LEPIDOPTERA, ETC.

BY PH. FISCHER, BUFFALO, N. Y.

If a specimen becomes oily, it is generally believed that its beauty can never again be restored; but with a trifling cost and a little labor, any specimen will in a short time have again its former lustre, without injury to the insect. This remedy has been tried on the most tender Diurnals, as well as on Sphinges and Noctuids; it can be used on every insect. Should a specimen be oily throughout, body and wings, it may be put in the following fluid: One part of sulphuric ether to two parts of the strongest alcohol, and left therein for about 24 hours. Should the specimen be very oily, another bath may have to be applied. Should this second bath, after removing the insect, be only slightly discolored, the insect may be put in the last bath, which consists of pure sulphuric ether, in which it is left a few hours only. After being taken out and partly dried, it is put on the spreading board. Another way of cleaning specimens, where only the wings are oily, is this: The specimen is put on the spreading board, under side up, without fastening it in any way, and the purest spirits of turpentine poured on it to fully soak the wings, after which finely-powdered pipe clay is strewn thickly over the affected parts, and this left to dry. Should the clay, after being dry, be yellow, the oil is not all out of the wings, and the above has to be renewed. Should the clay be perfectly white after drying, it can be relied upon that every particle of the fatty matter is drawn out of the wings. To remove the clay it needs a little experience, though any one can do it with a little care. Hold your specimen on the upper part of the pin, and give the pin a little jerk near the point, and the clay, being brittle, will easily fall off. After it is all removed, the specimen may be brushed off with a fine camel hair brush until clean. A specimen treated in the above ways will never again become oily.

CORRESPONDENCE.

Dear Sir: Whilst out for an entomological ramble at Lachine on Nov. 11th last, I took a fine specimen of *Dicerca obscura* Fab. at the foot of a tree, but whether the tree was an oak or a maple I unfortunately did not at the time note. Now this is very interesting, as it seems to indicate that this species, too, is double-brooded. I have read of some of the

Calcephoræ being captured late in the autumn, but never of *D. obscura*. Does it also hibernate? Perhaps some one that has a better knowledge of the habits of this species than I, may be able to give us an additional record of experience. The beetle, by the way, is rather a rarity in the vicinage of Montreal.

J. F. HANSEN, Montreal.

OECANTHUS.

Dear Sir: Referring to the genus *Oecanthus*, I have only been able to find in the works of several authors *O. niveus* as damaging fruit, etc. I have taken *O. niveus* entirely about apple and hard wood; *O. fasciatus* Fitch about raspberries, etc., and certain woody weeds. They are more common than *niveus* here, and very distinct.

E. W. ALLIS, Adrian, Mich.

ON THE FULMINATING PROPERTY IN CALATHUS GREGRAIUS SAY.

While collecting in the woods, 9th November, 1884, I rolled over an old rotten log and discovered a number of reddish-brown Carabs, with lighter legs and antennæ, which proved to be *Calathus gregarius*, Say. These I captured and put in a cyanide bottle. Looking at the bottle soon afterward, I noticed that it was filled with a white smoke, which, I soon saw, was emitted by the Carabs. This somewhat surprised me, as up to that time I had never heard of this peculiarity occurring in any other genus than *Brachynus*. Since then I have seen a notice of its having been observed in *Metrius* by Mr. Ricksecker (*Eutomolog. Amer.*, vol. I., p. 98). I should be glad to know if it has been noticed in *Calathus* by any other collectors.

C. H. T. TOWNSEND, Constantine, Mich.

Dear Sir: I have just become acquainted with the fact that a fine specimen of *Erebus odora* has been caught (in August, 1884) at the mouth of Eighteen-mile Creek, a few miles south of Buffalo, N. Y., by Mr. E. M. Chamot, of this city, at sugaring. The insect must evidently have been bred here, as it is not rubbed at all, only somewhat torn, and may not have been on the wing more than one night. It measures about five inches from tip to tip.

PH. FISCHER, Buffalo, N. Y.

Dear Sir: In connection with the article entitled "The Colias Controversy," by Mr. R. H. Stretch (CAN. ENT., vol. 18, p. 54-56), I would like to call attention to the fact that early in the year 1884, Mr. Stretch wrote Mr. W. H. Edwards that he knew nothing about the "purposely prepared" Colias (cf. *Papilio*, vol. 4, p. 170), but that on the 9th of December, 1885, he requires about two and a half pages of printed matter "to state in a concise manner" what he knows about it. Mr. Stretch quotes from his note-book, "*July 4th*,"* took very fine series of Colias (3 forms), and adds, "it" (the specimen under discussion) "might have been either one of these or some other." The "purposely prepared" Colias was taken at Umatala, June 25, so that we can all agree that it was "some other." Under the circumstances, I am unable to hold in high esteem Mr. Stretch's assertion that I have stated "the case exactly," or allow that he is able to add any *facts* to "The Colias Controversy."

SAML. HENSHAW.

OUT EARLY.

Dear Sir: *Belostoma Americanum*, the "Electric Light Bug," as it is popularly called here, and its usual companion, *Dytiscus marginalis*, the "Water Tiger," were out abundantly this evening at the electric lamps, as last summer. The toads also put in an appearance at the same time and place as they were accustomed to do last year. E. W. CLAYPOLE.

Akron, O., March 18, 1886.

INSTANCE OF RETARDED DEVELOPMENT, AUG. 11TH, 1883, CASSIA, FLA.

Dear Sir: About June 15th, I collected nine chrysalids of *Papilio cressphontes* from orange trees. They were newly made. From June 22nd to June 27th all but one gave imagines; this, on subsequent examination, was found to be alive, and (Aug. 11th) gave also its imago, a large ♀, thus being retarded in development about 45 days—the conditions of environment being the same for all.

J. ELWYN BATES, So. Abington, Mass.

* The italics mine.

